

5. DESCRIPTION OF A NEW SPECIES OF ACTINIA FROM THE DEVONSHIRE COAST. BY E. W. H. HOLDSWORTH.

When contracted, the body forms a rounded button about  $\frac{3}{4}$  of an inch in diameter, but in full expansion it is generally elongated to the extent of  $2\frac{1}{2}$  inches, and terminates in a somewhat cup-shaped disk about  $1\frac{1}{4}$  inch wide, and having its extended edges frequently thrown into irregular festoons. The tentacula, about 150 in number, are arranged in four or five series, as in most of the group to which this species belongs; the first row contains twenty-five arms, about half the length of the diameter of the disk, and moderately stout; the others gradually diminish in size as they proceed outwards, their numbers at the same time increasing; but the irregular manner in which they are placed renders it difficult to enumerate the contents, or to determine the limits of any one of the series. The disk is of a uniform olive-brown without any superficial markings,—the appearance of radiating lines, sometimes visible, being only the upper edges of the internal septa showing through the transparent skin; the mouth opens transversely, and displays a regular crenation of its pink lining membrane. The tentacula are of a reddish purple, and entirely destitute of rings or other marking; they present a remarkable contrast to the body of the animal, which at its upper part is of a dark orange colour, gradually assuming a paler tint towards the base; numerous white sucking-pores are disposed over the upper surface, and afford points of attachment to surrounding substances, when required to conceal the body; they also give exit to the convoluted filaments, which are abundantly thrown out from them, and the mouth, when the animal is irritated. Its natural haunts appear to be narrow crevices of rocks, into which it can retire when alarmed, and I was prevented obtaining many specimens by their having chosen such inaccessible hollows for their residence. Four or five examples were, however, procured at extreme low-water mark, from the very productive rocks outside Dartmouth harbour, and, excepting in size, presented no points of difference. I propose for this species the name of *vinosa*.

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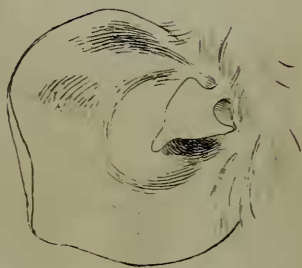
June 24, 1856.

Dr. Gray, F.R.S., in the Chair.

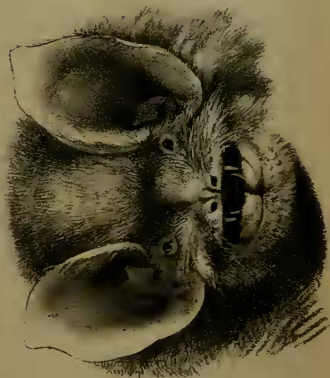
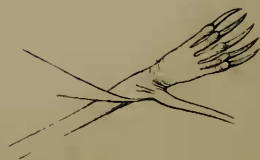
1. ON THREE GENERA OF VESPERTILIONIDÆ, FURIPTERUS, NATALUS AND HYONYCTERIS, WITH THE DESCRIPTIONS OF TWO NEW SPECIES. BY ROBERT F. TOMES.

(Mammalia, Pl. XLII., XLIII.)

The genus *Furia* was established by M. F. Cuvier from the examination of a single example taken at Mona in South America, by M. Leschenault.









Linnæus having previously made use of the name in another branch of zoology, it has been proposed by Prince Charles Lucien Bonaparte to substitute that of *Furipterus*. The latter name will be here adopted, and as the opportunity of examining a second species has occurred, it will afford the means of confirming the generic characters given by the original describer, and also supply some additional peculiarities.

#### Genus FURIPTERUS, Bonap.

The top of the head is very much elevated, leaving a deep hollow between that and the end of the nose. The muzzle is very short, rather small, and abruptly truncated at the end. This gives the end of the nose something the appearance of that part in the genus *Sus*, and the similarity is increased by the superior margin being produced in an upward direction, as in that genus. The end of the snout may properly be called a disc, widest at its base, and having a slight emargination in the middle of its upper boundary. In this disc the nostrils are placed, small, directed straight forward, and nearly round. Between them is a narrow vertical groove, continuous from the emargination of the upper border of the disc.

All the face is densely covered with soft long hair, only the flat end of the nose and the extreme margins of the lips being naked. Near to the edges of the lips, and about the corners of the mouth, the fur assumes the aspect of a beard. Around the upper margin of the nose-disc is a fringe of fine short silky hairs.

The ears are rather large and broad, directed forward, and deeply concave within. Their inner margins project inwards and forwards over the forehead in the shape of a rounded lobe. Their extremities are rather acute and directed outwards.

The tragus is shaped somewhat like the head of an arrow, supported on a narrow foot-stalk. It is short and rather broad, with a descending barb or point on each side, the outer one being the longer and more acute. From these it tapers rapidly to a narrow, but rounded tip, directed a little outwards.

The most remarkable peculiarities in the organs of flight consist in the excessively small size of the thumb, and the shortness of the middle phalange of the longest finger. The thumb has the basal joint much longer than the terminal one. It is wholly engaged in the antibrachial membrane, the nail only being free. The phalange of the finger, above alluded to, has its length contained three and a half times in that of the terminal one, and six times in that of the basal one. The middle phalange of the third finger also is somewhat shorter than is usual in most *Vespertilionidæ*.

The wing-membranes extend to the distal end of the tibia. The legs are long and slender, and the heel cartilage very long. All the membranes are thickly marked with fine dotted lines, the interfemoral having not less than twenty-five. In this respect they bear considerable resemblance to those parts in *Rhinolophus* and *Nycteris*.

The cerebral part of the skull is excessively elevated, quite dome-shaped, and the facial portion very much depressed.

From the extraordinary elevation and expansion of the parietal bones, the frontal bone is reduced to unusually small dimensions. Its posterior portion rises nearly at right angles from the termination of the nasal bones, is narrowly triangular, and ends in a point near the top of the elevated part of the cranium. Its anterior portion is nearly horizontal in position, and is deeply cleft in the middle by the nasal bones, which extend backwards as far as to the ascending part. What may therefore be called the facial part of this bone is divided into two forks, extending one on each side, between the nasal and maxillary bones. Each of these forks is somewhat swollen, and this, with a great depression along the line of union of the nasal bones, gives a deep longitudinal groove to the facial part of the cranium, which however becomes nearly obsolete at the nasal opening.

A great peculiarity consists in the development of the intermaxillary bones. These are not cleft in front as in *Vespertilio* (leaving only space enough for the incisors to be placed close to the canines, and in a line nearly continuous with them), but are united, leaving only two small incisive foramina in the anterior part of the palate. Also they differ materially from the same bones in the genus *Vespertilio*, in having the upper free margins, forming the walls of the nasal opening, continued without any diminution of their depth to their most anterior point. The upper margins of these bones are usually very much sloped in the genus *Vespertilio*.

In consequence of the great degree of development of the intermaxillary bones, abundant space is allowed for the incisor teeth. Accordingly there is a considerable interval on each side between them and the canines, and they are arranged, not in a line with the rest of the dental series, but *vertically* and in a regular curve across the extremities of the above-mentioned bones. There is however an interval in front, between the central ones, though not so considerable as the space contiguous to the canines.

Their form is that of a short cone, the inner pair with their points directed somewhat inwards.

The canines are of a very remarkable form—a form, so far as I am aware, not hitherto observed in any other mammal. They present four points: a central cusp of the usual canine form, a lobe accessory to this, and situated about the middle of its posterior edge, one at the base of the same edge, and one of a very pointed form at its anterior base. The remaining teeth in the upper jaw do not differ materially from those of *Vespertilio* proper.

The lower incisors are uniformly arranged and bifid. The canines are small, with an anterior and posterior spur at their bases, the anterior one being the longer, and appearing like two additional incisors. There are three premolars on each side, conical, and increasing in size as they approach the true molars. These latter resemble those of *Vespertilio* restricted.

The formula of dentition may be thus expressed:—

$$\text{In. } \frac{2}{3} \frac{2}{3}, \text{ C. } \frac{1}{1} \frac{1}{1}, \text{ P.M. } \frac{2}{3} \frac{2}{3}, \text{ M. } \frac{3}{3} \frac{3}{3}, \text{ total } \frac{16}{20}.$$

On examining the under surface of the skull, we find that the bony

palate does not extend posteriorly beyond the last molar. In this respect it resembles the genus *Miniopteris*, whilst in *Vespertilio* the palate extends as far backwards as to the middle of the zygoma; in *Vesp. (Kerivoula) picta*, nearly as far back as to the condyloid fossa.

The lower jaw has, at the lowest part of the symphysis menti, a prominent tubercle, directed downwards, and projecting below the level of the lower margin of the jaw. It is probable that this may be equivalent to the *spinæ mentales*. From this, the margin of the jaw curves very evenly and moderately to the *posterior angle*. The ramus is very high, and the *coronoid process*, the *condyle*, and the *posterior process*, are arranged in nearly the same horizontal line, the *condyle* being a little elevated above the other two. The *posterior process* has a peculiar outward direction.

Such are the characters derived from the examination of seven examples. They do not include some peculiarities mentioned by M. F. Cuvier, viz. the presence of a series of warts on the upper lip, and under the chin, the prominence of the eye, and the cartilaginous condition of the terminal half of the tail. I have failed to detect any warts, nor do I perceive that the eye is more prominent than in other *Vespertilionidæ*. As, however, I am describing from dried specimens, too great reliance cannot be placed on the apparent absence of these characters.

With respect to the tail, in the seven examples examined, five have it wholly withdrawn from the membrane, and the remaining two only partially withdrawn, the terminal vertebræ being left in the situation proper for the basal ones. This may possibly have been the case with the example mentioned by M. F. Cuvier, as suggested by Dr. Gray. True

It may not be amiss to remark that this genus resembles the genus *Kerivoula* of Dr. Gray (as illustrated by *Kerivoula picta*) in the form of the ear, but in no other respect have I found them similar. The crania, although greatly elevated in both, differ in other respects, and even in this they by no means closely agree.

The genus *Miniopteris* approaches most nearly to *Furipterus*, in the characters exhibited by the cranium. They somewhat resemble each other in the elevated form of the vertex, in the length of the bony palate, and in some measure in the form of the posterior portion of the lower jaw, and the development of the intermaxillary bones.

#### 1. FURIPTERUS HORRENS.

*Furia horrens*, F. Cuv. Mém. du Mus. xvi. p. 150. tab. 9; Fischer, Synop. Mam. Addenda, 352; Temm. Mon. ii. p. 264; Wagn. in Suppl. Schreb. Sauge. i. p. 549; Schinz. Synop. Mam. i. p. 207; Less. Nouv. Tab. Règ. Anim. p. 22.

The eyes prominent and large. The nostrils apical, and separated only by a margin surrounding them, forming a groove at their upper part. Lips entire, the upper one with four or five warts along its side. The lower lip has eight warts, conspicuous from being of a



white colour, amidst the surrounding black fur. Ears large, nearly as broad as long, simple in structure. The tragus is of a peculiar form, having three points arranged like a cross.

The fur is soft and thick, except at the muzzle, where it is longer and coarser than that of the other parts.

The colour is a fine uniform black.

Length of the head and body (English) 1' 7''' ; expanse 6'' 4½'''.

*Hab.* S. America, Mona.

## 2. *FURIPTERUS CÆRULESCENS*, n. s. (Pl. XLII.)

Top of the head very much elevated, face depressed, excessively hairy, only the end of the nose and the extreme edges of the lips being naked. Ears as broad as high, roundish, with the tips angular and directed somewhat outwards. Tragus short, supported on a narrow foot-stalk, immediately above which is a descending process on each side. From these it tapers rapidly to a narrow, but rounded point, which is directed a little inwards. About the middle, between the tip and the inner descending process, is a slight angular projection.

The fur is everywhere long and silky. That of the upper parts is slaty-blue at its base, slightly tipped with dusky-brown, but not sufficiently so, as to appear bicoloured. On the head it is somewhat paler than on the back. The long fur of the face is darker and not quite so blue. The fur margining the lips is of a silky ash-colour. The chin is of a uniform grey-brown, the breast blue-grey, the fur tipped for a third of its length with whitish-grey. On the belly and pubal regions it is nearly uniform whitish-grey.

Of the specimens examined, two are males and the remainder females, and all are obviously adult. The sexes are similar.

The great similarity in the size of the examples renders it unnecessary for me to give the measurements of more than one. For the purpose of comparison I add the dimensions of the figure illustrating M. F. Cuvier's memoir.

	<i>F. horrens.</i>		<i>F. cærulescens.</i>	
	"	'''	"	'''
Length of the head and body . . . . .	1	6½	1	3
— of the tail . . . . .	1	1 (?)		?
— of the head . . . . .	0	0	0	6
— of the ears . . . . .	0	4½	0	3½
— of the fore-arm . . . . .	1	5	1	4
— of the longest finger . . . . .	2	7	2	2
— of the fourth finger . . . . .	1	7	1	9
— of the tibia . . . . .	0	7	0	6½
— of the foot . . . . .	0	4	0	3½
Expanse, following the bones, of the wings	9	3	8	9

*Hab.* St. Catharine, Brazil.

## Genus *NATALUS*, Gray.

The forms of this genus bear considerable resemblance to those of *Furipterus*. The crown is very much elevated, and a deep depres-

sion separates it from the nose. The latter is broad, but not bulging at its sides, as observable in some *Vespertilionidæ* (such as *Scotophilus*, Gray). The top of the nose, in front of the eyes, is rather prominent, and rounds down evenly on all sides to the edge of the upper lip, which if seen from below would describe a half-oval figure. The above-mentioned prominence is furnished with a central longitudinal ridge, terminating between the nostrils. These are apical, approximated, and of an ovoid form. They are placed so near the margin of the lip that they might almost be described as situated in it. They do not interfere with the curvature of the outline of that part, being simple perforations.

The lower lip is furnished with a broadish, naked reflexed edge, divided by a vertical groove in front. Below this is an irregular semicircular double row of warts, studded with bristly hairs, and a larger one beneath at the symphysis menti.

The ears are rather large, broadest at two-thirds of the distance from their bases. They are furnished with a descending free lobe at the base of the outer margin, which is unattached to the side of the face, somewhat like the *lobulus* of the human ear. Their extreme tips are directed outwards.

The tragus is of very peculiar form; it is supported on a distinct stalk, which springs horizontally from the inside of the auditory opening. From the extremity of this, the tragus rises vertically, and occupies the usual position in the ear. It is short, broad, and somewhat fleshy. The two margins curve to a rather acute tip, which is directed a little inwards. At the outer edge, towards the base, is a descending angular projection. About the middle of the ascending part, the tragus is twisted upon itself, in such a manner as to present only the *edge* of the upper part to the eye, whilst the basal portion presents its *flat* surface. From its tip spring a number of fine bristly hairs, straight and long.

The legs, feet, and os calcis are long, and the toes occupy about one-half of the length of the feet. The tail is very long, equal in length to the head and body; it consists of seven joints, the terminal one being small. The wing-membranes have a singular mode of attachment to the tibia. Viewing the animal from the under side they are seen to proceed from the base of the os calcis, in the form of a narrow rudiment of membrane, extending up the inside of the tibia for a fourth of its length. At this point they cross over the tibia, and pass outwards, forming the posterior margins of the wings. The thumb is rather small, but the wings do not present any other great peculiarities. All the membranes are thickly marked with dotted lines as in *Furipterus*, the interfemoral membrane having between twenty and thirty.

The upper incisors are four in number, in pairs, separated from the canines by an interval, and with a space in the middle between the pairs. They are small, of nearly uniform size, and obtusely conical. In the space between them is a prominent horse-shoe-shaped cartilage, a little in advance of them, being a prolongation of

the anterior boundary of the palate. Behind this is a transverse prominent palatal ridge, divided in the middle by a notch.

NATALUS STRAMINEUS, Gray. (Pl. XLIII.)

*Natalus stramineus*, Gray, Mag. Zool. & Bot. ii. p. 496; Cat. Mam. Brit. Mus. p. 28.

The face is very hairy, particularly along the median ridge, and on the upper lip, where it takes the form of a thick long moustache, extending the whole length of the lip. This rises on each side over the top of the nose, meeting in the middle, and forming a kind of transverse ridge of hair. Immediately in front of the eye is a naked space. The ears when held up to the light, present a singular dotted appearance, and resemble in this respect the *Vesp. papillosus* of Temminck. The extreme tip of the tail is exerted.

The fur is of medium length and substance. On the upper parts, of a uniform brownish-yellow; on the under, the same but paler. The membranes and naked parts are reddish-brown.

The whole of the above has been taken, by the kind permission of Dr. Gray, from the two examples mentioned in his Catalogue, and the following are their dimensions. The first column refers to the specimen in spirit from South America, and the second to the one from St. Blas, North America.

	No. 1.		No. 2.	
Length of the head and body . . . . .	" 1	" 9	" 1	" 11, about.
— of the tail . . . . .	2	2	2	0, nearly.
— of the head . . . . .	0	9	0	7½
— of the ears . . . . .	0	5	0	4
— of the tragus . . . . .	0	2	0	1¾
Breadth of the ear . . . . .	0	6	0	4¾
Length of the fore-arm . . . . .	1	5½	1	4½
— of the longest finger . . . . .	3	0	2	9
— of the fourth finger . . . . .	2	2	1	11
— of the thumb . . . . .	0	2	0	2¼
— of the tibia . . . . .	0	9½	0	8
— of the foot . . . . .	0	4	0	4
Expanse, following the bones, of the wings	10	6	10	0

Genus HYONYCTERIS, Licht. et Peters.

Incisors four above, in pairs, separated by a space in the middle, the apices bifid; below, six, contiguous, trifid. Canines, distinct, long, conical, surrounded by two rings or collars. Molars above and below, six on each side, the upper anterior ones separate, the three posterior ones close together and W-shaped. Tongue medium; snout elongated beyond the lips, with a discoid end (somewhat as in *Furipterus*). Nostrils below, *ensiform*. Lips tumid, the margins broadly reflected. Ears separate, broad, and furnished with tragus and antitragus. Wing-membranes broad, extending the whole length of the leg and foot, quite to the base of the nails. Interfemoral

membrane entire, completely enclosing the tail, the last joint only of which is exerted. Thumb free, nailed, and with a broad suctorial disk attached to it. Index finger very short, scarcely a fourth as long as the basal phalange of the longest finger; all the remaining fingers with three phalanges. The feet with five toes, furnished with a suctorial disc. All the toes composed of only two phalanges, and united by a web. Os calcis lobed and long.

1. *HYONYCTERIS DISCIFERA*, Licht. et Peters.

*Hyonycteris discifera*, Licht. et Peters, Neue merkwl. Säugeth. 1855\*.

The upper parts cinnamon-brown, beneath paler; wings dusky-brown.

Length of the head and body . . . .	1	7
— of the tail . . . . .	1	3
— of the head . . . . .	0	7
— of the ears . . . . .	0	5½
— of the tragus . . . . .	0	2
— of the fore-arm . . . . .	1	3½
— of the longest finger . . . .	2	6
— of the fourth finger . . . .	1	8½
— of the tibia . . . . .	0	7
— of the foot and claws . . . .	0	3
Expanse of wings . . . . .	8	3

*Hab.* Puerto Cabello, Central America.

2. *HYONYCTERIS ALBIVENTER*, n. s.

The specimen from which the present description has been taken has lost some of its parts by accident, and with them some of the peculiarities described by MM. Lichtenstein and Peters in the paper already alluded to. Thus, the tragus has been eaten away from each ear by insects, the nose-disc apparently so much rubbed as to have lost its original form, and the thumbs are entirely wanting. In other respects the specimen is in sufficient preservation to confirm the characters given by the above-mentioned authors, and also to furnish an additional peculiarity not given by them in their description of the genus. This will be hereafter indicated.

The crown of the head is very considerably elevated, the face very concave, and the muzzle rather elongated. The ears are scarcely as broad as high, the inner margin (towards the top of the ear) is very much rounded, and the extreme tip is conspicuously directed outwards. The outer margin is considerably hollowed out † for nearly

\* Gelesen in der Druckerei der Akademie der Wissenschaften, am 22 Juni 1854. Berlin 1855.

† It appears desirable to state that the expression "hollowed out" must be taken in its literal sense, as the form here attempted to be described is very different from what is usually called "an emarginate ear," in the genus *Vespertilio*. In this genus it is a distinct "notch" in the outer margin of the ear: in *Hyonycteris* it is simply a shallow piece scooped out of the margin,—at least such is the

the whole of its length, but with a rounded prominence at its base. The face is very hairy, and the upper lip has a distinct moustache of long hair.

On the whole of the upper parts the fur is of a reddish-brown colour, uniform in tint from its root to the tip. On the under parts it is pure white, tinged with rufous on the humeral region and on the chin.

This species appears to differ from the last in having the ear much more hollowed out externally, in being somewhat larger, and in having the under parts pure white.

Length of the head and body.....	2	0
— of the tail, about .....	1	2
— of the head.....	0	9
— of the ears .....	0	3 $\frac{3}{4}$ *
— of the fore-arm .....	1	5 $\frac{1}{2}$
— of the longest finger .....	2	6 $\frac{1}{2}$
— of the fourth finger .....	1	10
— of the tibia.....	0	8 $\frac{1}{2}$
— of the foot and claws.....	0	3
Expanse of wings, following the phalange..	10	6

*Hab.* River Napo, near Quito, where it was collected by Mr. Bates.

In addition to the generic characters given by the authors already quoted, the very peculiar form of the claws of the hinder feet may be mentioned. These are rather long, have a small degree of curvature, are very slender, and not compressed laterally as in other Bats. Their under surface is rather deeply hollowed out; in this respect they bear considerable resemblance to the claws of some Rasorial birds, such as the genus *Tetrao*, but they are relatively more slender. From their form they could scarcely be used as organs of suspension, and it is not improbable that the conspicuous discs attached to the thumbs and feet may answer the same purpose that claws are known to do in the ordinary Bats.

The elevated form of the cranium deserves special attention, as indicating an affinity in this particular with the genera *Furipterus* and *Natalus*.

The peculiarity of having the wing membranes extend to the claws is not restricted to this genus, as I have observed it in the *Vesp. suillus* of M. Temminck. This species has been considered by Dr. Gray to be sufficiently dissimilar from other examples of the genus *Vespertilio*, to merit generic distinction, under the name of *Murina*. Another species from Ceram (*Vesp. vulpinus*, Temm. Mus.

case in the specimen I possess, but in the figure already referred to, this is less conspicuous.

\* In taking the measure of the ear, it is my custom to consider it as a simple projection, and to measure along the line of greatest convexity of the hinder surface. This imaginary line will proceed from that part of the base nearest the crown, to the tip of the ear. A line along its anterior or posterior margin would be rather an indication of form than of absolute length, and should therefore be given additionally if the form of the ear seems to require it.

